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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Ying Feria

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EXAMINER

LY, NGHI H

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/661,967	Applicant(s) FERIA ET AL.	
	Examiner NGHI H. LY	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-13, 25 and 26 is/are allowed.
- 6) ☒ Claim(s) 14-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>03/18/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Terminal Disclaimer (filed 11/29/07) has not been approved for the reason that the attorney not of record. Applicant should file a new Terminal Disclaimer with attorney of record (see Power Attorney, dated 03/24/04).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 14, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bella (US 5,765,098) in view of Sherman (US 5,966,371) and further in view of Tanaka et al (US 6,157,685).

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Regarding claims 14, 18 and 20, Bella teaches a method of controlling a communications system having a stratospheric platform (see fig.1 and see column 8, lines 19-25, column 9, lines 8-23), the method comprising the steps of:

Bella does not specifically disclose receiving a first signal having a first beam having interference from a second beam therein at a gateway station, receiving a second signal having a second beam having interference from the first beam therein at the gateway station.

Sherman teaches receiving a first signal having a first beam having interference from a second beam therein at a gateway station, receiving a second signal having a second beam having interference from the first beam therein at the gateway station (see fig.1 and see column 2, lines 7-12, also see see fig.1, communication between ground station 11 and satellite).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Sherman into the system of Bella in order to reduce multipath fading in bent-pipe satellite communication system (see Sherman, column 1, lines 8-12).

The combination of Bella and Sherman does not specifically disclose subtracting said second signal from said first signal to obtain the first beam, and subtracting said first signal from said second signal to obtain the second beam.

Tanaka teaches subtracting said second signal from said first signal to obtain the first beam (see fig.3, fig.6 and fig.7, see "INTERFERENCE REMOVAL SECTION 21", and see "INTERFERENCE REMOVAL SECTION 22", also see Title, Abstract, column

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2, lines 30-38, and column 4, line 15 to column 6, line 46, see “subtracting”, “subtracted”, also see “interference-canceller” and it reads on applicant’s “subtracting”, and see column 15, lines 45-47), and subtracting said first signal from said second signal to obtain the second beam (see fig.3, fig.6 and fig.7, see “INTERFERENCE REMOVAL SECTION 21”, and see “INTERFERENCE REMOVAL SECTION 22”, also see Title, Abstract, column 2, lines 30-38, and column 4, line 15 to column 6, line 46, see “subtracting”, “subtracted”, also see “interference-canceller” and it reads on applicant’s “subtracting”, and see column 15, lines 45-47).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Tanaka into the system of Bella and Sherman in order to provide a multistage interference canceller equipment and interference canceller method for use (see Tanaka, Abstract).

5. Claims 15-17, 19 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bella (US 5,765,098) in view of Sherman (US 5,966,371) and further in view of Tanaka et al (US 6,157,685) and Baier et al (US 6,519,477).

Regarding claims 15 and 21-24, the combination of Bella, Sherman and Tanaka teaches a communication system of claim 1. The combination of Bella, Sherman and Tanaka does not specifically disclose prior to the steps of receiving, generating the first beam and the second beam using a payload controller and a phased array antenna having a plurality of elements therefore; and wherein prior to the step of subtracting said second signal from the first signal, weighting the second signal with a first weight, and

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prior to the step of subtracting said first signal from said second signal, weighting the first signal with a second weight.

Baier teaches prior to the steps of receiving, generating the first beam and the second beam using a payload controller and a phased array antenna having a plurality of elements therefore; and wherein prior to the step of subtracting said second signal from the first signal, weighting the second signal with a first weight, and prior to the step of subtracting said first signal from said second signal, weighting the first signal with a second weight (see fig.5, the weights W1, W2, W3 and W4, prior to box "interference Cancellation").

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Baier into the system of Bella, Sherman and Tanaka in order to allow channel impulse response to be determined in an improved manner, such that the determination of the channel impulse responses are resistant to interference source (see Baier, column 1, line 66 to column 2, line 2).

Regarding claims 17 and 19, the combination of Bella, Sherman and Tanaka teaches a communication system of claims 1, 14 and 18. The combination of Bella, Sherman and Tanaka does not specifically disclose said first weight and said second weight are a function of user position files.

Baier teaches said first weight and said second weight are a function of user position files (see column 8, lines 57-67 wherein proper weights are obtained adaptively, where adaptive variation as a function of user position file is inherently implied. In addition, Applicant's specification page 10, lines 12-18 merely recites "the

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user position files". However, it fails to further define what a "the user position files" is. Therefore, Baier does indeed teach Applicant's claimed limitation with a broadest reasonable interpretation).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Baier into the system of the combination of Bella, Sherman and Tanaka in order to allow channel impulse response to be determined in an improved manner, such that the determination of the channel impulse responses are resistant to interference source (see Baier, column 1, line 66 to column 2, line 2).

Regarding claim 16, the combination of Bella, Sherman, Tanaka and Baier further teaches performing said step of subtracting said second signal from said first signal to obtain the first beam in a first subtracting block in the gateway station, and performing said step of subtracting said first signal from said second signal to obtain the second beam in a second subtracting block in the gateway station (see Tanaka, fig.3, fig.6 and fig.7, see "INTERFERENCE REMOVAL SECTION 21", and see "INTERFERENCE REMOVAL SECTION 22", also see Title, Abstract, column 2, lines 30-38, and column 4, line 15 to column 6, line 46, see "subtracting", "subtracted", also see "interference-canceller" and it reads on applicant's "subtracting", and see column 15, lines 45-47).

Allowable Subject Matter

6. Claims 1-13, 25 and 26 are allowed.

Claims 1-13, 25 and 26 are allowable over the prior art of record for the reasons as stated in the Applicant's remarks (relates to claims 1-13, 25 and 26) dated 06/22/09 (pages 9-17).

Response to Arguments

7. Applicant's arguments filed 06/02/09 have been fully considered but they are not persuasive.

On page 10 of applicant's remarks, applicant argues that *"There is no teaching or suggestion in the Bella reference for a stratospheric platform. A stratospheric platform is significantly different than a satellite"*.

In response to applicant's arguments (relates to claims 14 and 18), the recitation *"a stratospheric platform"* has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

In addition, claim 20 fails to recite the *"stratospheric platform"* and claim 20 recites differently *"receiving a plurality of signals, each from one of the plurality user...determining an amount of interference from user position file..."*.

For the above reason, the examiner maintains the rejections of claims 14- 24.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NGHI H. LY whose telephone number is (571)272-7911. The examiner can normally be reached on 9:30am-8:00pm Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne Bost can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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Nghi H. Ly

/Nghi H. Ly/
Primary Examiner, Art Unit 2617